

PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF BALLENGER CREEK PIKE AND THE NORTH BUS EXIT OF TUSCARORA HIGH SCHOOL IN FREDERICK COUNTY. A BASE MOUNTED CABINET, STREET LIGHTING, PAVEMENT MARKINGS AND SIGNS WILL BE INSTALLED AT THE INTERSECTION. BALLENGER CREEK PIKE IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION SHALL OPERATE IN A NEMA (3) THREE PHASE, FULL- TRAFFIC- ACTUATED MODE, WITH A PUSHBUTTON ACTUATED PEDESTRIAN MOVEMENT TO CROSS THE NORTH LEG OF BALLENGER CREEK PIKE. A NEMA EIGHT- PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER HOUSED IN A SIZE '6' BASE-MOUNTED CABINET WITH ALL NECESSARY EQUIPMENT FOR AN UNDERGROUND FEED AT BALLENGER CREEK PIKE AT TUSCARORA HIGH SCHOOL NORTH BUS EXIT. UNDERGROUND FEED BY ALLEGHENY POWER COMPANY.

EQUIPMENT LISTS

A. EQUIPMENT TO BE SUPPLIED BY THE STATE HIGHWAY ADMINISTRATION (SHA).

ITEM	QUANTITY	DESCRIPTION
9000	1 EA	[UPDATED] (CONT/CAB/ADD) DETECTOR RACK POWER SUPPLY
9000	1 EA	(CONT/CAB/ADD) DETECTOR AMPLIFIER 4-CH RACK MT
9000	1 EA	(CONT/CAB/ADD) DETECTOR RACK POWER SUPPLY
9000	1 EA	[UPDATED] 4 CHANNEL DETECTOR AMPLIFIER
9000	1 EA	CABINET W/ TELEMETRY, SIZE 6
9000	1 EA	CONTROLLER ASC II W/ TELEMETRY
60	SF	[UPDATED] SHEET ALUMINUM SIGN
1	EA	M95-1 (MD 351) (VAR.X 24") MAST ARM MOUNTED
1	EA	D-3(1) (Ballenger Creek Pike) (VAR.X16") MAST ARM MOUNTED
1	EA	R3-2 (No Left Turn) (30"X30") MAST ARM MOUNTED
2	EA	W3-3 (New Signal Ahead) (36"X36") GROUND MOUNTED
1	EA	R5-1(DO NOT ENTER) (30"X30") GROUND MOUNTED

EQUIPMENT LISTS (cont.)

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM	QUANTITY	DESCRIPTION
1001	2	EA Maintenance of Traffic
2002	3	CY Test Pit Excavation
5003	184	LF Removal of Existing Permanent Pavement Line Markings - Any Width
5005	235	LF F & I 12" Heat Applied White Permanent Preformed Thermoplastic Pavement Markings
5006	65	LF F & I 24" Heat Applied White Permanent Preformed Thermoplastic Pavement Markings
6004	6	SF F & I 4" Concrete Sidewalk
8001	11	CY F & I Concrete Foundation
8002	4	EA F & I 12" Ped Sig Head Section
8018	2	EA F & I Ped Pole (Any Size)
8019	1	EA Remove & Dispose Material & Equipment Per Assignment
8029	66	LF F & I Wood Sign Supports 4" x 4"
8031	300	LF F & I No. 6 AWG Stranded Bare Copper Ground Wire
8033	30	LF F & I 1" Electrical Conduit - Galvanized Sleeve
8037	140	LF F & I 3" Schedule 80 Rigid PVC Conduit-Bored
8038	175	LF F & I 4" Schedule 80 Rigid PVC Conduit-Bored
8039	1200	LF F & I 2" Schedule 80 Rigid PVC Conduit-Trenched
8040	650	LF F & I 3" Schedule 80 Rigid PVC Conduit-Trenched
8041	75	LF F & I 4" Schedule 80 Rigid PVC Conduit-Trenched
8046	1	EA F & I Metered Service Pedestal
8048	60	LF F & I Electrical Cable 1-Conductor No. 4 AWG-THHN/THWN
8052	2	EA F & I Noninvasive Detector, 500' Lead In Cable
8054	9	EA F & I Electrical Handhole
8056	66	SF Install Ground Mounted Sign
8057	32	SF Install Overhead Sign
8063	1	EA F & I Steel Pole With A Single 38' Mast Arm
8066	1	EA F & I Steel Pole With Twin 50' And 60' Mast Arms
8071	2	EA F & I 250 Watt High Pressure Sodium Lamp And Luminaire
8075	4	EA F & I Ground Rod -3/4" Diameter x 10' Length
8077	18	EA F & I 12" Vehicular Traffic Signal Head Section
8082	200	LF F & I Electrical Cable - 2 Conductor (Aluminum Shielded)
8083	175	LF F & I Electrical Cable - 2 Conductor (No. 14 AWG)
8085	300	LF F & I Electrical Cable - 5 Conductor (No. 14 AWG)
8086	740	LF F & I Electrical Cable - 7 Conductor (No. 14 AWG)
8087	270	LF F & I Electrical Cable - 2 Conductor (No. 12 AWG) TC
8088	900	LF F & I Loop Wire Encased In Flexible Tubing (No. 14 AWG)
8089	245	LF F & I Saw Cut For Signal (Loop Detector)
8090	2	EA F & I Pushbutton And Sign
8091	2	EA F & I 15' Lighting Arm On Signal Structure
8096	1	EA Install Controller And Cabinet - Base Mount

MAINTENANCE OF TRAFFIC

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT.

STANDARD NO. MD-104.00 - 104.00-30
STANDARD NO. MD-104.31-01 (FLAGGING OPERATION)
STANDARD NO. MD-104.33-01 (SHOULDER WORK)
STANDARD NO. MD-104.35 (LANE SHIFT)
STANDARD NO. MD-104.32-01 (INTERSECTION FLAGGING OPERATION)

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. ROBERT FISHER
DISTRICT ENGINEER
PHONE: (301) 624-8140

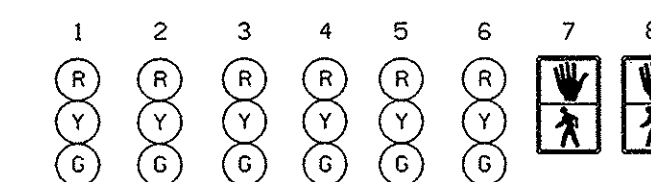
MR. JOHN CONCANNON
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 624-8141

MR. DAVE COYNE
ACTING ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (410) 624-8140

MS. ANDREA ABEND
ACTING DISTRICT UTILITIES ENGINEER
PHONE: (310) 624-8116

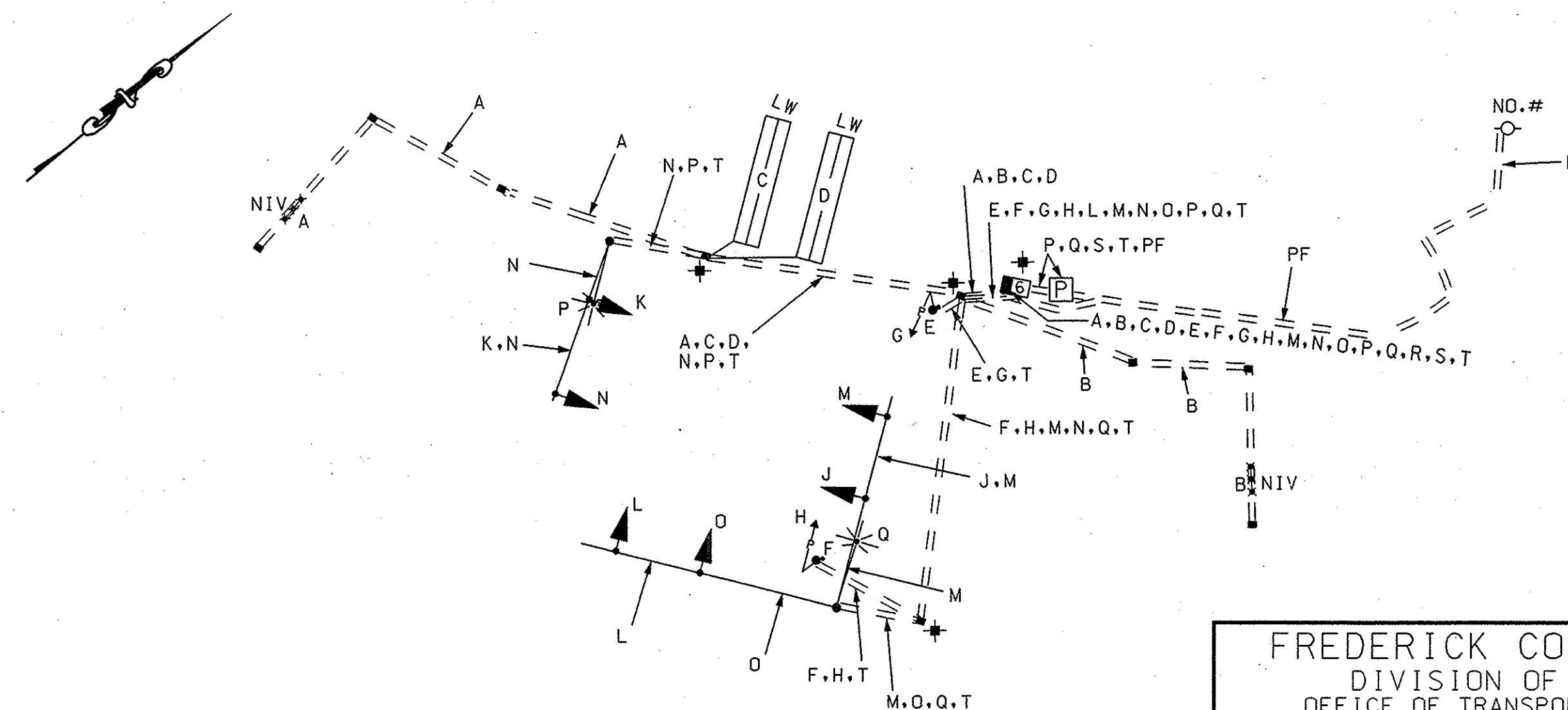
MR. RICHARD L. DAFF, SR.
CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630

PHASE CHART



Phase 2 & 6	G	G	G	G	R	R	DW	DW	
2 & 6 Change	Y	Y	Y	Y	R	R	DW	DW	←→
PHASE 4	R	R	R	R	G	G	DW	DW	↓
4 Change	R	R	R	R	Y	Y	DW	DW	↓
ALT Phase 4	R	R	R	R	G	G	WK	WK	↓
PED Clearance	R	R	R	R	G	G	FL/DW	FL/DW	↓
ALT 4 Change	R	R	R	R	Y	Y	DW	DW	↓
Flashing	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	DARK	DARK	←→
Operation									←→

WIRING DIAGRAM



WIRING KEY

- A,B - NON-INVASIVE PROBE LEAD-IN
- C,D - 2 CONDUCTOR (ALUMINUM SHIELDED) ELECTRICAL CABLE
- E,F - 2 CONDUCTOR (NO. 14 AWG)
- G,H,J-L - 5 CONDUCTOR (NO.14 AWG)
- M,N,O - 7 CONDUCTOR (NO. 14 AWG)
- P,Q - 2 CONDUCTOR TRAY CABLE (NO.12 AWG)
- R - 3 WIRES (NO.:4 AWG) FOR TRAFFIC SIGNAL ELECTRICAL SERVICE
- T - STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
- NIV - NON-INVASIVE PROBE SET
- LW - LOOP WIRE (NO. 14 A.W.G)
- PF - PROPOSED UNDERGROUND FEED-BY POTOMAC ELECTRIC POWER COMPANY
- - PROPOSED METER AND PEDESTAL
- ★ - GROUND ROD

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK, MARYLAND

THIS MODIFICATION DESIGNED BY:

DESIGNED BY _____ DATE _____

DRAWN BY _____ SCALE _____

CHECKED BY _____

* BAI PERSONNEL

APPROVED: *Alan G. Walsh* 6/14/05
DIVISION OF PUBLIC WORKS, DIRECTOR

APPROVED: *McLennan* 6-14-05
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION, HEAD

APPROVED: *Robert Slen* June 14, 2005
OFFICE OF TRANSPORTATION ENGINEERING, ENGINEERING MANAGER DATE

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 351(BALLENGER CREEK PIKE)
TUSCARAORA HIGH SCHOOL N. EXIT

APPROVALS	REVISIONS	GENERAL INFORMATION SHEET
TEAM LEADER		SCALE 1"= 20' DATE 04/04/2005 CONTRACT NO. _____
ASST. DIV. CHIEF		DESIGNED BY M.A.MEARS COUNTY FREDERICK
DIVISION CHIEF		DRAWN BY M.A.MEARS LOGMILE _____
OFFICE DIRECTOR		CHECKED BY RJM T.I.M.S. NO. _____
		F.A.P. NO. _____ TOD NO. _____
		DRAWING NO. SG-2 OF SG-2 SHEET NO. 6 OF 6

PLOTTED: \$DATE\$
FILE: \$FILE\$

BAI

BRUDIS & ASSOCIATES, INC.

CONSULTING ENGINEERS

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